

II. *Descriptions of the species of the Lepidopterous genus Kallima.* By FREDERIC MOORE, F.Z.S.

[Read February 5th, 1879.]

KALLIMA, Westwood, Doubleday and Hewits., D. Lep. p. 324 (1850); Felder, Neues Lep. p. 14 (1861).

Group I. *With oblique band fulvous in male, bluish-white in female.*

KALLIMA PARALEKTA.

*Paphia Paralekta*, Horsfield, Catal. Lep. E. I. C. pl. 6, f. 4 ♂ (1829).

Male. Forewing with an oblique uniformly narrow fulvous band, its inner border terminating at posterior angle; basal area and hindwing deep blue. Female, with bluish-purple white band; basal area and hindwing dark rufous-brown; discal hyaline spot in both sexes small and oval.

Exp.  $3\frac{7}{8}$  ins.

*Hab.*—Java (Horsfield Coll.).

KALLIMA HEWITSONI, n. sp.

*Kallima Paralekta*, Doubleday and Hewitson, Diurnal Lep. pl. 52, f. 3 ♀ (1850).

Female. Similar to *K. Paralekta*, differing in the shape of the bluish-purple white band and absence of the discal hyaline spot.

Exp. 4 ins.

*Hab.*—Himalaya. In Coll. late W. C. Hewitson.

Although the "Himalaya" is given by Doubleday and Hewitson (l. c. p. 325) as the locality of this species, I doubt its correctness. There is no locality label on the type specimen.

Group II. *With oblique band fulvous in both sexes.*

- A. Forewing produced; oblique below apex.
- aa. Discal spot prominent .. *Burtoni*. [Sumatra.]  
*Limborgi*. [Upper Tenasserim.]
- bb. Discal spot not prominent.. *Atkinsoni*. [Darjiling.]
- B. Forewing truncate at apex.
- aa. Discal spot prominent .. *Boisduvali*. [Kussowlee.]  
*Huttoni*. [Mussuree.]
- bb. Discal spot not prominent..
- C. Forewing acuminate at apex.
- aa. Discal spot prominent .. *Ramsayi*. [Nepal.]
- D. Forewing prolonged at apex.
- aa. Discal spot prominent .. *Inachis*. [Sikkim.]  
*Hügeli*. [Cashmere.]
- bb. Discal spot not prominent.. *Buckleyi*. [N. W. Himalaya.]

## KALLIMA BUXTONI, n. sp.

Most like the Java species (*K. Paralekta*). Male, differs in the intensity of the blue of the upperside, broader and more oblique band, the inner border of which terminates at its own width above the posterior angle; female, paler purple-blue, with broad fulvous band, as in male. Underside, male, dusky greyish-green, vinous tinted and black speckled, with broad greyish fasciæ; female, pale greenish-ochreous, vinous tinted; rib line only prominent.

Exp. ♂  $3\frac{6}{8}$ , ♀  $3\frac{7}{8}$  ins.

*Hab.*—Sumatra (Buxton). In Coll. F. Moore.

## KALLIMA ATKINSONI, n. sp.

Female. Outline of wings as in *K. Buxtoni*. Upperside similar, the fulvous band narrower; discal hyaline spot smaller and slender; blue of base and on the hind-wing of a purplish-violet tint. Underside chestnut-brown, numerously speckled with dark brown; fasciæ greyish.

Exp. ♀  $3\frac{5}{8}$  ins.

*Hab.*—Darjiling. In Coll. F. Moore.

## KALLIMA LIMBORGI.

*Kallima Limborgi*, Moore, P. Z. S. 1878, p. 828.

Differs from *K. Inachis*, from Sikkim. Male and female of a deeper and more uniform steel-blue colour

above; the forewing is less angled on the hindward part of the exterior margin, the apex being more produced in the male and less so in the female; the discal hyaline spot small and almost circular; the hindwing also is less convex on the exterior margin and has a much shorter tail. Underside luteous-brown, purple tinted, and rufous speckled, brightest in female; rib and basal lines indistinct in male.

Exp. ♂  $3\frac{3}{4}$ , ♀ 4 ins.

*Hab.*—Upper Tenasserim. In Coll. Brit. Mus. and F. Moore.

### KALLIMA INACHIS.

*Paphia Inachus*, Boisd. Crochard's Edit. Cuv. Règ. Anim. Ins. II. pl. 139, fig. 3 (1836), ♀.

A large, dark, bright violet-blue, prominently-marked species; the forewing with broad fulvous band extending to outer margin; the outer borders of hindwing paler and prominently marked with short brown strigæ. Forewing with a short apical point in male and a very prolonged one in female; discal hyaline spot larger than in the other species. Underside ochreous-brown, vinous tinted, minutely brown speckled; rib line indistinct.

Exp. ♂  $3\frac{2}{8}$ , ♀  $3\frac{7}{8}$  ins.

*Hab.*—Sikkim Himalayas. In Coll. F. Moore.

Dr. Boisduval gives Nepal as the habitat of the species which he figures as above. This is doubtless an error.

### KALLIMA BUCKLEYI, n. sp.

Compared with its nearest ally (*K. Inachis*) this species has quite a different appearance, the male being of larger size than the same sex of that species; outline of wings similar; forewing with a shorter and broader fulvous band than in any of the other species, the discal spot blind (having no hyaline centre) in the male, and present only as a minute slender one in the female; basal area and the hindwing of a uniform greyish-blue. Underside of male dusky purple-brown; bright reddish-brown in female, with greyish-purple sinuous fasciæ; rib line indistinct in male.

Exp. ♂ ♀ 4 ins.

*Hab.*—N. W. Himalaya. In Coll. F. Moore.

## KALLIMA HÜGELI.

*Paphia Hügelii*, Kollar; Hügel's Kasch. iv. p. 432,  
pl. 9 (1844).

*Kallima Inachis*, Westw. in Royle's Himalayan Bot.  
pl. 10, f. 3; H. Schæff. Exot. Schmett. f. 7, 8 (1852).

May be at once distinguished by the very pale grey-blue colour of the basal area of forewing and the hindwing. Forewing of female with less prolonged apex than in *K. Inachis*. Underside greyish-ochreous, of uniform tint throughout; frequently black mottled; rib line indistinct.

Exp. ♂  $3\frac{3}{8}$ , ♀  $3\frac{1}{8}$  ins.

*Hab.*—N. W. Himalaya; Cashmere. In Coll. F. Moore.

## KALLIMA RAMSAYI, n. sp.

Distinguished by its very dark and prominent markings: forewing with short sharp-pointed apex; the upper or apical border of fulvous band very irregular; the outer marginal parallel sinuous line very prominent; a single large discal hyaline spot; basal area and hindwing very dark iron-grey blue; female with the exterior margin of forewing more convex hindward and at posterior angle, and the exterior border of hindwing fulvous-brown. Underside chestnut-brown, sparsely speckled, and with pale ochreous fasciæ; rib line prominent.

Exp. ♂ ♀  $3\frac{3}{8}$  ins.

*Hab.*—Nepal, District of Katmandu (Gen. Ramsay). In Coll. F. Moore.

## KALLIMA HUTTONI, n. sp.

Distinguished by the forewing being truncated anteriorly and the apex not prolonged; fulvous band narrow and continued to the marginal angle, its upper or apical border less undulated being nearly even in some specimens; basal area and hindwing bright deep dusky vinous blue, discal hyaline spot minute. Underside deep chestnut-brown, with greyish-purple fasciæ; rib line prominent.

Exp. ♂ ♀  $3\frac{2}{8}$  ins.

*Hab.*—Mussoorie, N. W. Himalaya (Capt. T. Hutton). In Coll. F. Moore.

## KALLIMA BOISDUVALI, n. sp.

Of smaller size than the other species here described: forewing truncated and blunt-pointed at apex; fulvous

band narrow, its inner angular border broadly black; discal hyaline spot small but prominent; basal area and hindwing uniformly blue. Underside ochreous-brown, numerous covered with dark-brown speckles and strigæ; rib and basal transverse lines very prominent.

Exp.  $2\frac{7}{8}$  ins.

*Hab.*—Kussowlee, N. W. Himalaya. In Coll. F. Moore.

Group III. *With oblique band white in both sexes.*

KALLIMA ALBOFASCIATA.

*Kallima albofasciata*, Moore, P. Z. S. 1877, p. 584.

Both sexes with a prominent cream-white narrow band, large apical spot, and a dark-bordered hyaline discal spot; basal area and hindwing greyish indigo-blue. Underside greyish-ochreous, sparsely brown speckled; rib line prominent.

Exp.  $3\frac{3}{8}$  ins.

*Hab.*—S. Andamans. In Coll. F. Moore.

Group IV. *With oblique band blue in both sexes.*

KALLIMA HORSFIELDI.

*Paphia Horsfieldi*, Kollar; Hügel's Kasch. iv. p. 431, pl. x. ♀.

This species has a prolonged apex to the forewing, a broad oblique bluish-white band, and is without the discal hyaline spots; base of wings very pale blue, the outer border of hindwing greenish-ochreous. Underside ochreous, with greenish-ochreous fasciæ.

Exp.  $3\frac{4}{8}$  ins.

*Hab.*—N. W. Himalaya (Hügel).

I have not yet seen specimens of this species from the locality given by Hügel, but I possess a specimen of what I doubtfully take to be the same from the collection of the late Dr. Leith, which he stated was captured in Belgaum (2,260 feet, W. Ghauts of S. India). Specimens have also been taken by Mr. Newton and Dr. Smith on the Matheran Hill, near Bombay.

## KALLIMA MACKWOODI, n. sp.

Upperside pale indigo-blue, the band on forewing very pale in male, almost white in female. Both sexes with two prominent hyaline discal spots, the lower spot large. Underside greenish-grey, with brown transverse band and outer purplish fasciæ. Underside greenish-ochreous, brown speckled, purplish fasciæ, and prominent brown rib line.

Exp. ♂  $3\frac{1}{8}$ , ♀  $3\frac{2}{8}$  ins.

*Hab.*—Ceylon. In Coll. F. M. Mackwood and F. Moore.

## KALLIMA DOUBLEDAYI, n. sp.

Smaller than *K. Mackwoodi*. Male: of a dark dull greenish-grey, the band on forewing paler, with two hyaline spots. Female, greyish-cyaneous, the band also paler than in *K. Mackwoodi* and without hyaline spots. Underside dull ochreous-brown, markings dark sap-brown.

Exp. ♂  $3\frac{1}{8}$ , ♀  $3\frac{4}{8}$  ins.

*Hab.*—Scind Hills, N. W. India. In Coll. of Brit. Mus.

## KALLIMA ALOMPRA, n. sp.

Male. Has most the appearance of *K. Doubledayi* from Scind. Differs in being darker, the band also of a darker and different tint, and the male has only a minute hyaline lower discal spot, which is slightly more apparent in the female. Underside greenish-brown, tinted with purple; rib line prominent, dark brown.

Exp. 3 ins.

*Hab.*—Burmah. In Coll. F. Moore, and late W. C. Hewitson.

## KALLIMA WARDI, n. sp.

Distinguished by having a narrow blue band which crosses the wing more erect than in any other species, and the outer black border extends broadly to posterior margin; it has two oval discal hyaline spots: base of wing and hindwing of a greenish tint, outer border of the latter brownish. Underside dark vinous-brown, grey tinted basally.

Exp.  $3\frac{1}{8}$  ins.

*Hab.*—Calicut, Malabar Coast (Coll. S. N. Ward). Also taken at Coonoor by Mrs. Godfrey Clerk.

KALLIMA PHILARCHUS.

*Amathusia Philarchus*, Westwood, Cabinet of Oriental Entom. p. 56, pl. 27, f. 4 (1848).

Differs from *K. Mackwoodi* in the basal area and the hindwing being of a deep, dusky steel-blue colour, and in the absence of the discal hyaline spots.

Exp. 3 $\frac{1}{2}$  ins.

*Hab.*—Ceylon. In Coll, F. Moore.